UCS 1617 – MINI PROJECT
STUDENTS INFORMATION SYSTEM

CONCEPTUAL CLASS & DOMAIN MODEL

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CONCEPTUAL CLASS & DOMAIN MODEL

Association

Definition:

Associationis a group of links having common structure and common behavior. Association depicts the relationship between objects of one or more classes. A link can be defined as an instance of an association.

Name :Name of the association
Role :The specific role of the association
Multiplicity :Indicates the number of objects that are connected
Type :Plain association, aggregation, composition
Direction :Direction can also be shown for

Association-Multiplicity:

Multiplicity on association specify properties of the number of links that can exist between instances (objects) of the associated classes. That is, it indicates how many objects of one class relate to one object of another class. It is indicated by a single number or a range of numbers.
We can add multiplicity on either end of class relationship by simply indicating it next to the class where the relationship enters.

Aggregation

Definition:

Aggregationis a vague kind of association in the UML that loosely suggests whole-part relationships.
It has no meaningful distinct semantics in the UMLversus a plain association, but the term is defined in the UML.
It normally Posses the “has-a” relationship
Guideline: Therefore, following the advice of UML creators, don’t bother to use aggregation in the UML; rather, usecompositionwhen appropriate.

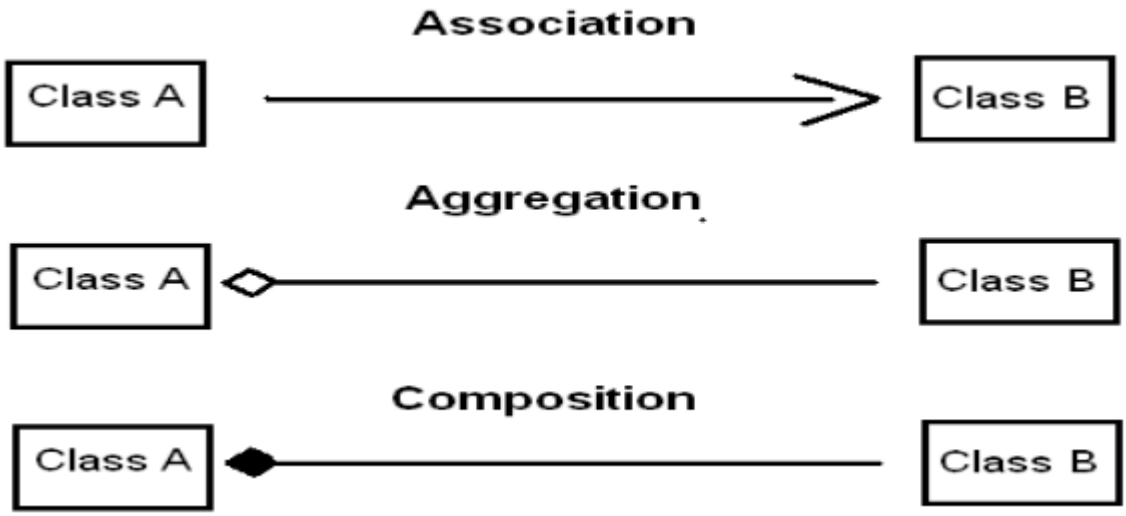
Composition

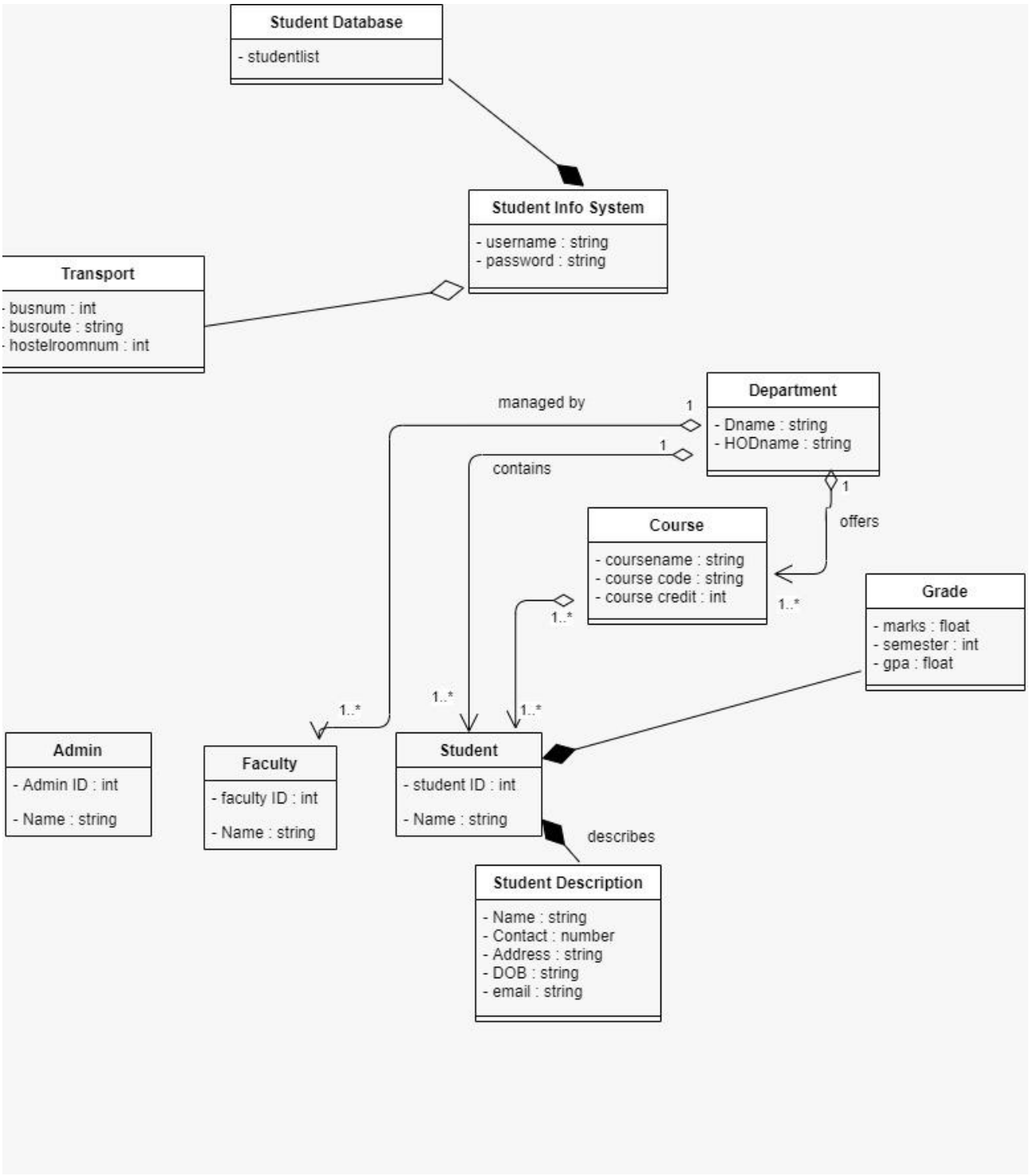
Definition:

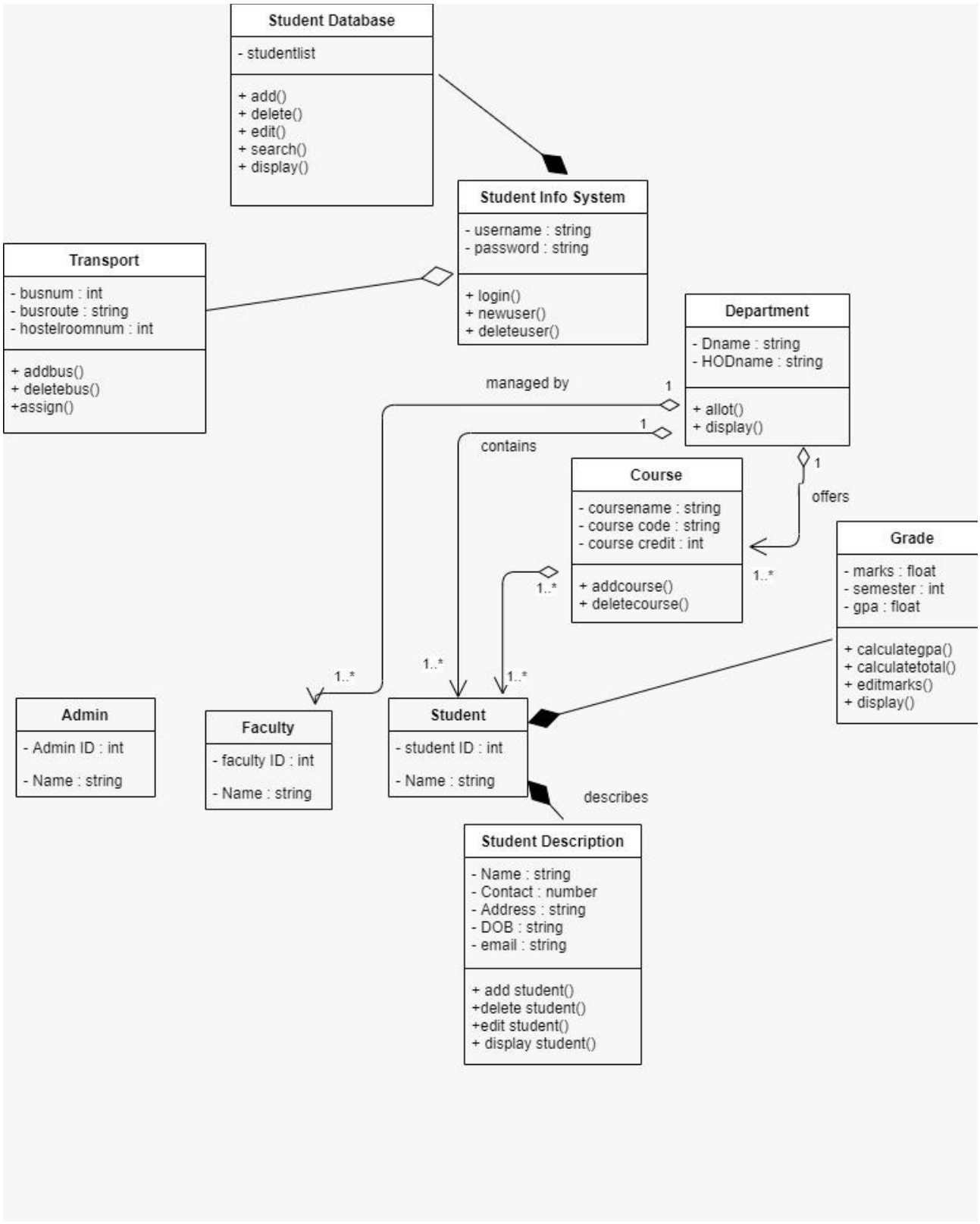
Composition, also known ascomposite aggregation, is a strong kind of whole-part aggregation andisuseful to show in some models.

Example:

B"uses“ A = Aggregation : A exists independently (conceptually) from B


Association
Class A
Class B
Aggregation
Class A
Class B
Composition
Class A
Class B


Student Database
- studentlist
Student Info System
- username : string
- password : string
Transport
- busnum : int
- busroute : string
- hostelroomnum : int
Department
- Dname : string
- HODname : string
managed by
1
1
contains
1
offers
Course
- coursename : string
- course code : string
- course credit : int
1..*
1..*
Grade
- marks : float
- semester : int
- gpa : float
1..*
1..*
1..*
Admin
- Admin ID : int
- Name : string
Faculty
- faculty ID : int
- Name : string
Student
- student ID : int
- Name : string
describes
Student Description
- Name : string
- Contact : number
- Address : string
- DOB : string
- email : string


Student Database
- studentlist
+ add()
+ delete()
+ edit()
+ search()
+ display()
Student Info System
- username : string
- password : string
+ login()
+ newuser()
+ deleteuser()
Transport
- busnum : int
- busroute : string
- hostelroomnum : int
+ addbus()
+ deletebus()
+assign()
Department
- Dname : string
- HODname : string
+ allot()
+ display()
managed by
1
1
contains
1
offers
Course
- coursename : string
- course code : string
- course credit : int
+ addcourse()
+ deletecourse()
1..*
1..*
Grade
- marks : float
- semester : int
- gpa : float
+ calculategpa()
+ calculatetotal()
+ editmarks()
+ display()
1..*
1..*
1..*
Admin
- Admin ID : int
- Name : string
Faculty
- faculty ID : int
- Name : string
Student
- student ID : int
- Name : string
describes
Student Description
- Name : string
- Contact : number
- Address : string
- DOB : string
- email : string
+ add student()
+delete student()
+edit student()
+ display student()